

Calendar No. 612

113TH CONGRESS }
2d Session

SENATE

{ REPORT
113-318

A BILL TO IMPROVE THE TRANSITION BETWEEN
EXPERIMENTAL PERMITS AND COMMERCIAL LI-
CENSES FOR COMMERCIAL REUSABLE LAUNCH VE-
HICLES

R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND
TRANSPORTATION

ON

S. 2140



DECEMBER 12, 2014.—Ordered to be printed

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED THIRTEENTH CONGRESS

SECOND SESSION

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VEHICLES

DECEMBER 12, 2014.—Ordered to be printed

Mr. ROCKEFELLER, from the Committee on Commerce, Science, and
Transportation, submitted the following

R E P O R T

[To accompany S. 2140]

The Committee on Commerce, Science, and Transportation, to which was referred a bill to improve the transition between experimental permits and commercial licenses for commercial reusable launch vehicles (S. 2140), having considered the same, reports favorably thereon with an amendment (in the nature of a substitute) and recommends that the bill (as amended) do pass.

PURPOSE OF THE BILL

The purpose of S. 2140, as reported, is to improve the transition between experimental permits and commercial licenses of commercial reusable suborbital launch vehicles.

BACKGROUND AND NEEDS

Under the Commercial Space Launch Act (CSLA) (98 Stat. 3055), as amended by the Commercial Space Launch Amendments Act of 2004 (118 Stat. 3974), the Federal Aviation Administration (FAA) Office of Commercial Space Transportation (AST) issues both experimental permits for launch vehicle testing and separate licenses for operational activities. Commercial space companies in the reusable suborbital vehicle (RSV) market are in the process of testing vehicle designs under AST experimental permits. These permits are valid for a one-year, renewable term and allow for unlimited testing of new design concepts, equipment, or operating techniques; for demonstrating compliance with requirements to obtain a launch or reentry license; and for training crew. AST also determines the scope of design changes permissible before requiring another, sepa-

rate experimental permit. Under current law, experimental permits are limited to non-revenue flights or activities.

After obtaining a license from AST, companies may initiate revenue-generating flights—carrying cargo or crew for compensation—and gain coverage under the Federal Government’s launch indemnification regime. Under current law (51 U.S.C. 50906), however, once AST issues a launch or reentry license for a particular vehicle design (including for an RSV), the experimental permit ceases to be valid. In practice, the issuance of a license for operational flights could therefore impede commercial companies from continuing flight tests to improve the vehicle design, even if operational and experimental flights occurred on different launch vehicles of the same design. Companies have expressed concern that this restriction, in forcing an immediate transition between vehicle testing and commercial operation, is inefficient and limits safety and performance improvements. Further, they argue that delaying a license application in order to continue experimental tests could complicate efforts to seek capital. The bill would therefore address these concerns by more clearly establishing the flexibility to continue vehicle testing after a launch license has been granted.

On October 31, 2014, the RSV *SpaceShipTwo* disintegrated during a flight test as part of the development and test program by the vehicle’s manufacturer, Scaled Composites. Tragically, the accident resulted in the injury of the pilot and in the death of the copilot. The flight test occurred under an experimental permit issued to Scaled Composites. Virgin Galactic, a commercial space company, had planned to obtain a license to begin operating the vehicle for revenue upon completion of the flight test and development program underway by Scaled Composites, as early as 2015. The accident and the ongoing National Transportation Safety Board investigation, however, will likely alter Virgin Galactic’s flight schedule and testing plan, making S. 2140 less time sensitive. Nonetheless, the flexibility afforded by S. 2140 could prove useful to other commercial space companies that eventually transition from experimental permits to commercial licenses.

SUMMARY OF PROVISIONS

S. 2140 would amend section 50906 of title 51, United States Code, clarifying the purposes and limitations of experimental permits for RSVs. The bill would expand eligibility for experimental permits to include reusable suborbital rockets or rocket designs that have been issued a license for operational activities. In addition, commercial companies would gain the ability to launch and reenter RSVs to test existing design concepts, equipment, and operating techniques under an experimental permit. Current law, conversely, restricts permit eligibility to the testing of new design concepts, equipment, or operating techniques.

LEGISLATIVE HISTORY

S. 2140 was introduced on March 13, 2014, by Senators Heinrich, Rubio, and Tom Udall and referred to the Committee on Commerce, Science, and Transportation. Senators Feinstein, Wicker, and Cornyn have since been added as cosponsors. On April 9, 2014, the Committee met in open Executive Session and, by voice vote,

ordered S. 2140 to be reported favorably with an amendment in the nature of a substitute.

On May 16, 2013, the Science and Space Subcommittee held a hearing on “Partnerships to Advance the Business of Space.” The hearing focused on Federal oversight of emerging orbital and sub-orbital commercial space companies and the potential economic benefits of these activities. In written testimony, multiple witnesses advocated for greater flexibility in the use of experimental permits, arguing that the current, legislative restrictions could stymie growth in the commercial space industry. According to a witness, removing the automatic revocation of experimental permits would help the industry grow by enabling “flight-testing of new vehicles as they enter service, something required as the industry matures into operating fleets of vehicles.”¹

On August 2, 2013, in the House of Representatives, Representatives McCarthy and Posey introduced the Suborbital and Orbital Advancement and Regulatory Streamlining (SOARS) Act. The SOARS Act is broader than S. 2140, as it seeks to streamline the permit/license process overall, would revise the CSLA definition of “launch services,” and would establish a demonstration project related to the use of experimental aircraft in launch and reentry activities.

ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

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The Department of Transportation (DOT) regulates commercial launches of orbital and suborbital rockets. Firms that engage in such launches must obtain either an experimental permit—which allows repeated launches to test rocket design concepts and operating procedures—or a commercial license, which goes beyond an experimental permit by also allowing the licensee to transport commercial passengers. Under current law, obtaining a commercial license effectively negates the licensee’s experimental permits.

S. 2140 would amend current law to specify that a firm could obtain a commercial license without relinquishing its experimental permits, and make other clarifications to activities that could be pursued under experimental permits.

CBO estimates that enacting the legislation would not significantly affect the federal budget. Based on information from DOT, we expect the proposed change would have a negligible effect on the department’s administrative costs. S. 2140 would not affect direct spending or revenues; therefore, pay-as-you-go procedures do not apply.

¹Senate Committee on Commerce, Science, and Transportation, Written testimony of Commercial Spaceflight Federation President Capt. Michael Lopez-Alegria, (USN Ret.), *Hearing on Partnerships to Advance the Business of Space*, 113th Cong. (May 16, 2013).

S. 2140 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act and would impose no costs on state, local, or tribal governments.

The CBO staff contact for this estimate is Megan Carroll. The estimate was approved by Theresa Gullo, Deputy Assistant Director for Budget Analysis.

REGULATORY IMPACT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported:

NUMBER OF PERSONS COVERED

The bill would affect FAA's AST and those entities already subject to FAA rules and regulations. The number of persons covered should therefore be consistent with the current levels of individuals or businesses impacted under the provisions that are addressed in the bill. As a result of provisions under this bill, companies testing reusable suborbital vehicles should see increased flexibility for testing to continue to improve vehicle safety and performance, and crew training. Changes would include:

- Eliminating the prohibition on RSV or RSV designs holding both an experimental permit and operational license.
- Permitting RSV to test existing design concepts, equipment, and operating techniques under an experimental permit.

ECONOMIC IMPACT

The bill would not authorize any new funding and is therefore not expected to have an inflationary or adverse impact on the Nation's economy. It is anticipated that there would be a positive economic impact for companies testing and operating reusable suborbital vehicles since the language would allow for ongoing improvements for vehicle safety and performance.

PRIVACY

S. 2140 would not have an adverse impact on the personal privacy of individuals.

PAPERWORK

S. 2140 is not expected to increase the paperwork requirements for private individuals or businesses since the bill would only impact businesses already subject to the FAA's permitting and licensing requirements.

CONGRESSIONALLY DIRECTED SPENDING

In compliance with paragraph 4(b) of rule XLIV of the Standing Rules of the Senate, the Committee provides that no provisions contained in the bill, as reported, meet the definition of congressionally directed spending items under the rule.

SECTION-BY-SECTION ANALYSIS

Section 1. Commercial space launch licensing.

This section would amend the current limitation where an experimental permit for a suborbital rocket design ceases to be valid when a license is issued for launch or reentry of that same design. Allowable testing under an experimental permit would be broadened to include research and development for existing—rather than solely for new—design concepts, equipment, or operating techniques.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

TITLE 51. NATIONAL AND COMMERCIAL SPACE PROGRAMS

SUBTITLE V. PROGRAMS TARGETING COMMERCIAL OPPORTUNITIES

CHAPTER 509. COMMERCIAL SPACE LAUNCH ACTIVITIES

§ 50906. Experimental permits

(a) A person may apply to the Secretary of Transportation for an experimental permit under this section in the form and manner the Secretary prescribes. Consistent with the protection of the public health and safety, safety of property, and national security and foreign policy interests of the United States, the Secretary, not later than 120 days after receiving an application pursuant to this section, shall issue a permit if the Secretary decides in writing that the applicant complies, and will continue to comply, with this chapter and regulations prescribed under this chapter. The Secretary shall inform the applicant of any pending issue and action required to resolve the issue if the Secretary has not made a decision not later than 90 days after receiving an application. The Secretary shall transmit to the Committee on Science of the House of Representatives and Committee on Commerce, Science, and Transportation of the Senate a written notice not later than 15 days after any occurrence when the Secretary has failed to act on a permit within the deadline established by this section.

(b) In carrying out subsection (a), the Secretary may establish procedures for safety approvals of launch vehicles, reentry vehicles, safety systems, processes, services, or personnel that may be used in conducting commercial space launch or reentry activities pursuant to a permit.

(c) In order to encourage the development of a commercial space flight industry, the Secretary may when issuing permits use the authority granted under section 50905(b)(2)(C).

(d) The Secretary may issue a permit only for reusable suborbital rockets that will be [launched or reentered] *launched or reentered under that permit* solely for—

[(1) research and development to test new design concepts, new equipment, or new operating techniques;]

(1) *research and development to test design concepts, equipment, or operating techniques;*

(2) showing compliance with requirements as part of the process for obtaining a license under this chapter; or

(3) crew training **【prior to obtaining a license】** for a launch or reentry using the design of the rocket for which the permit would be issued.

(e) Permits issued under this section shall—

(1) authorize an unlimited number of launches and reentries for a particular **【suborbital rocket design】** *suborbital rocket or rocket design* for the uses described in subsection (d); and

(2) specify the type of modifications that may be made to the suborbital rocket without changing the design to an extent that would invalidate the permit.

(f) Permits shall not be transferable.

【(g) A permit may not be issued for, and a permit that has already been issued shall cease to be valid for, a particular design for a reusable suborbital rocket after a license has been issued for the launch or reentry of a rocket of that design.】

(g) The Secretary may issue a permit under this section notwithstanding any license issued under this chapter. The issuance of a license under this chapter may not invalidate a permit under this section.

(h) No person may operate a reusable suborbital rocket under a permit for carrying any property or human being for compensation or hire.

(i) For the purposes of sections 50907, 50908, 50909, 50910, 50912, 50914, 50917, 50918, 50919, and 50923 of this chapter—

(1) a permit shall be considered a license;

(2) the holder of a permit shall be considered a licensee;

(3) a vehicle operating under a permit shall be considered to be licensed; and

(4) the issuance of a permit shall be considered licensing.

This subsection shall not be construed to allow the transfer of a permit.